"Strength Through Diversity"

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Dennis Goreham, Manager
Automated Geographic Reference Center
5130 State Office Building
Salt Lake City, UT 84114

Dear Mr. Goreham,

Carbon County is pleased to submit the enclosed proposal for cadastral surveying and parcel mapping in 2000-2001.

We applaud the vision of your office, the Utah Association of Counties, the Governors Office, the Quality Growth Commission, the Rural Parnership Board and the Utah State Legislature to assist rural counties with funding to complete this work.
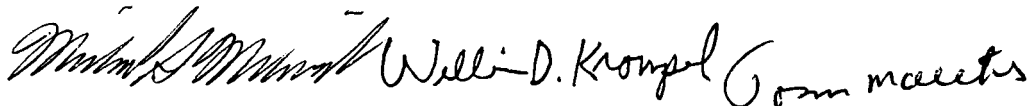
Because of this team effort, the cadastral grid will benefit land and mineral developers, taxation agencies and the smooth operation of County and State government for years to come. A good cadastral grid will prevent the waste of many thousands of dollars by providing us now with the most precisely available data about Carbon County.

Thank you for your consideration and your previous assistance in building a geographic database about Carbon County.

Cordially,

Michael Milovich
Commissioner

Bill Krompel
Commissioner

Tom Matthews
Commissioner

Proposal for:
Utah Cadastral Data Mapping Assistance Program
State of Utah Department of Administrative Services

Section 1. Proposal Summary

Intent Statement:
The intent of the project is to continue building a highly accurate database containing section corners and parcels. The section corner database should be usable by surveyors working in Carbon County. Coordinates should be available via the Internet in State Plane projection NAD 1983 datum in U.S. Survey feet units.

Statement of Need: There are three focuses for the 2000 funding:
1. Scofield area in the NW corner of the County is the only area missing both GCDB and local survey corners. Funding may be used to survey some corners in this area.
2. The federal (GCDB) section corners must be substituted by better quality local survey data in the grid used for the GIS database. This will allow GPs of the Roads and federal Digital aerial photos to be correctly georeferenced with the parcel maps.
3. Mapping of parcels by coordinate geometry is continuing. Due to problems with legal descriptions, it is now anticipated that there may be over 50,000 parcels in Carbon County, not the 12,000 to 15,000 originally counted.

Description of Proposed Project
1. Contractor will be hired to survey sections in the Scofield area.
2. Contractor or new GIS staff will work with the County Surveyors and the Bureau of Land Management Geographic Coordinate Database staff in Salt Lake City to create the best possible section corner grid for Carbon County.
3. New GIS staff will continue to map parcels by coordinate geometry.

Contact Person and Collaborators
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Benefit to the State and Others
- All GIS databases rely on a good cadastral grid. Completing this now will save money in remapping layers due to a poor grid.
- Local, State and Federal Surveyors will be able to access the cadastral grid easily when developing economic projects in the County.
- Parcel maps will be used in all County departments when completed for taxation, emergency services and planning.

Budget for Proposed Activities

Carbon County is a Class 3 County thus a 100% match is required for personnel, equipment and supplies related to this project.

Item	Grant Funding	County Match
Contract to Survey Scofield	$ 7,000	
County Staff Supervision & Labor		$4,000
Upgrades to GPS Base Station		$3,000
Create Cadastral Grid for County	$ 3,000	
County Staff Supervision & Training		$ 1,000
Use of County Computer Hardware & Software		$ 1,800
Supplies		$ 200
Parcel Mapping	$10,000	
County Staff Supervision & Training		$ 3,000
County Staff Technician Labor		$ 4,000
Use of County Computer Hardware & Software		$ 2,600
Supplies		$ 400
TOTALS	$20,000	$20,000

Time Frame and outcomes.

August 25, 2000	Notification of Proposal Acceptance
August 28, 2000	Begin Parcel Mapping
October 10, 2000	Assign/hire staff for cadastral grid
November 1, 2000	RFQ on Scofield Survey Submitted
December 1, 2000	First draft of cadastral grid submitted
December 1, 2000	Survey Contractor Chosen
December 1, 2000	Completed parcels merged into one layer and distributed to County Departments with GIS capabilities (Recorder, Roads, E911)
December 31, 2000	Interim Report Submitted to the State
March 1, 2000	Final deliverable of cadastral grid submitted
May 1, 2000	Scofield Survey Corners Delivered
June 1, 2000	Cadastral grid updated to include Scofield
June 1, 200	Completed parcels merged into one layer and distributed to County Departments with GIS capabilities (Recorder, Roads, E911)
June 30, 2001	Final Report Submitted to the State with cadastral grid deliverables and metadata

CARBON COUNTY GIS IMPLEMENTATION PLAN
August 2000

INTRODUCTION
General Intent: To map information currently in the County database to meet the county's legal obligations and to assist in planning and recording data by adding a spatial component.

IDENTIFY PARTICIPANTS
GIS Team: The GIS Technical Team meets annually and includes the:

    County Commissioners
    Clerk Auditor (Voting Records)
    Assessor (Tax Data)
    Recorder (Land Ownership)
    Roads (Road Issues)
    Public Safety and Dispatch (E911)
    Sheriff (Crime and Emergency Response)
    Maintenance (Noxious Weeds and Mosquito Abatement).
    Engineer (Surveying and Cadastral Grid Maintenance)
    Economic Development

It is their job to review GIS work completed and to set priorities for the coming year.

CURRENT ACTIVITIES AND INVENTORY
Priority 1:
Parcel and Cadastral Mapping: Thus far over 6,000 parcels have been mapped by Coordinate Geometry and Attributed in a database. The Recorder database has moved from PMSI to Singer and the COGO mapping has made the transition. Also, parcels are now being mapped to a 1:24,000 section corner grid rather than the 1:100,000 previously used.

Priority 2:
Road Documentation: All Class B roads have been mapped by global positioning system. About half of the Class D and RS2477 roads have been field documented. Roads documented as of December 31, 1999 have been substituted into the County road layer database and the data cleaned with topology for the first time. Road maps have been linked to the Supervisor's Excel database. Links still to be made to the Macintosh database.

Priority 3:
Zoning: Zoning has been completed and is updated annually.

Priority 4
Gas and Mineral Development
For the first time, we have been able to keep up on the Proposed new gas well data and provide the Planning Department with timely information on wells in critical agricultural or environmental zone areas.

Other Projects:
Internet: A web page has been built, server and software purchased and a contractor hired to start serving data and maps via the Internet. Rudimentary services are available now at http://gis.co.carbon.ut.us.

Intranet: It is hoped that a county Intranet operating with the same software will distribute data to all county departments within the year without requiring their purchase of software.

County GPS Community Base Station: Has been upgraded to survey grade. This data is available to all persons using GPS within a 300-mile radius for correcting their data. The Base station operates around the clock with files available via the Internet. The anticipated purchase of radios will allow the County Surveyors to use the Base Station in the field to speed their work.

Addressing: A Countywide address database has been completed by the Planning Department. Road database is updated but topology & address ranges must still be completed before Geocoding can be done.

Projection Change: The County has been creating a new GIS database in the State Plane NAD 1983 projection at 1:24,000 or better scale as requested by the County Surveyors. The GIS database layers in UTM NAD 27 projection are complete (except for addressing and parcels). All necessary files from the SGID have been converted into the County GIS database. These files function as a general reference at 1:100,000 scale.

Voting Districts: Voting Districts have been updated with further mapping completed to change them again in 2001 to conform to U.S. Census guidelines.

Data gathered from other sources are included in Appendix A.

GOALS AND OBJECTIVES

Section Corner Grid
Create section grid of best existing monument data with bearing and distances between corners. Monument section corners and resurvey using survey-grade GPS and registered land surveyors
Property Parcels
Map private property parcels and continue COGO mapping of all deeds recorded.
Aerial Photos
Federal Digital Orthophotographs have been purchased and are expected October 1, 2000.
Update Projection and Datum
Reproject current data into State Plane NAD 83 in feet. This is ongoing.
Metadata, Liability and Accuracy
Correct and document all data to an SGID accepted accuracy of 1:24,000 scale.
Roads
Map all Class D Roads to 1:24,000 accuracy. Document widths, culverts, signs and other features.
Make compatible with the Road Department database on Labor and Materials. Document title to each road and collect affidavits. Assist State of Utah attorneys in RS2477 litigation on ten County roads.
Mineral Extraction
Keep track of coal and gas leases and production. Map the wells in three dimensions to show their relation to the aquifer and other geologic layers.
Public Use
Put appropriate maps & data on the Internet. Allow the public to create maps, download data and purchase maps.
Make Systems Compatible in County
Build County Intranet to allow all departments with Intranet access to map data via ArcIMS without any additional software purchase.
Training and Custom Applications
Assist departments to access and use GIS daily to improve their operations. Build custom applications for heavy GIS users in the county.
Emergency Services Routing
Critical Facilities layer has been completed as first draft. Prepare Road, and address files for automated emergency vehicle routing and emergency response.
Flood Zones
Digitize the Flood Insurance Rate Maps into the GIS Database. Assist in preparation for new flood zones due to the Colorado River Salinity Project (elimination of canals).
Tracking Analyst
Get new E911 Crime and Dispatch software running on the Dispatch system
Survey Ground Control in Eastern, Central and Western Carbon County
Set control for future corner monumentation and rectification of aerial photos.

IMPLEMENTATION PLAN

DISTRIBUTION OF DATA
- When approved by the Commissioners, distribute data to the State
- When approved by the Commissioners, distribute data to the public via the Internet
- Distribute GIS data to County Departments via the Intranet. Build custom applications so departments can more easily use geographic data with their current databases.
- Investigate methods to allow the public, other agencies and staff to access the database, perhaps by voice commands

2. **BUILD THE DATABASE**
   - Continue writing grant proposals to leverage the County money in building the GIS database.
   - Former Contractors, for security reasons, have been converted to Permanent or Temporary Staff. Up to five temporary staff are building the database at times. Continue to allow trained persons to be maintained on staff when possible.
   - Archive the data safely for future reference.
   - As other departments and agencies in the County build GIS databases, serve as the repository of that data to check it for corruption, clean it, incorporate it into the County database where appropriate and archive it for County uses.
   - Create Metadata and meet federal and local standards for creation of data

3. **TRAIN DEPARTMENTS TO ACCESS AND EDIT THE DATABASE**
   - Nine County staff have now been certified in GIS training, including the Recorder's Office, Sheriff's Department, Emergency Dispatch and the Road Department staff.
   - The GIS Specialist is an authorized GIS instructor and a Certified GPS instructor. Through agreement with the College of Eastern Utah, classes are regularly offered at no charge to County employees.
   - Continue to invest in training for the GIS staff for cost efficiency of labor dollars.
   - GIS Specialist has written or assisted with successful grant proposals to supply E-911, the Road Department and the Recorder's Office with GIS Software.

4. **CREATE MAPS AND RESEARCH DATA FOR SPECIAL COMMISSION, ATTORNEY AND DEPARTMENT PROJECTS AS REQUESTED**
   - Current mapping projects are always of top priority over building the database.
   - Projects are the responsibility of the GIS Department until individual departments are capable of handling their own projects.

Layers may be Available on a Requested Basis. Metadata is provided for layers created by Carbon County. Data from other sources may or may not have metadata.

County Road Department	Class B Roads
	Class D Roads
	City Roads
	Other roads
	Road Features with Photographs, including signs, culverts, bridges, gates
	1981 BLM/County MOU Road Maintenance
	Map of UDOT priorities and mileage according to pavement type
	BLM Off Highway Vehicle Zones
	US Forest Service Roadless Areas
	Gravel Sites
County Planning Department	Manti-La Sal Forest Boundaries
	Federal & State Land Transfer 1999
	Price City culinary water and sewer
	South Price Water District valves, lines and hydrants
	County Watersheds, Water Courses and Water Bodies
	Federal, State and Private Land Ownership
	County Zones as of Jan 2000
	Proposed Gas Wells
	Proposed Trails in County by Use Type
	Proposed Spring Canyon Trail
	Proposed Helper Parkway/ Spring Canyon St. Trail
	County Address Database
	Block demographic data
	Block Group Demographic Data
	Tract Demographic Data
	Prime Farmland
	Air Pollution Point Data
	Proposed Wilderness Study Areas
	Scofield Critical Slope Areas
	Scofield Lake high water line and properties affected
	Public Buildings
	Railroad Lines
	Zip codes
	Place names
	Ecological Regions
	Wildlife Critical Habitat for Antelope, Badger, Bear, Deer, Desert Tortoise, Elk, Ferret, Gecko, Goats, Martens, Moose, Rabbit, Bighorn Sheep and Squirrel
	Soils
	Vegetation
	Points of Water Diversion
	Dams
	Land Use Change 1990 – 1998
	5.8-meter Indian Satellite images
	Earthquake Fault Lines
	1:100,000 and 1:24,000 scale topographic maps
County Maintenance Department	Noxious Weeds GPS'd and sprayed 1997 and 1998
	Estimated Weed Infestations
	Biological Insect Control Release Areas
	All Burials in the County except those in municipal cemeteries

APPENDIX A
CURRENT DATA LAYERS IN THE
CARBON COUNTY GIS DATABASE –2000 (continued)

County Economic Development	Helper & Price Cities Redevelopment Districts
	County Economic Development Zone
	Coal Mines and Leases
	Gas Wells as of June 2000
	Gas Well Water and gas production records
	Mineral Resources
	Industrial Land available
	Air Pollution Point Data
	30 meter Satellite Image, churches, places of interest,
Travel Council	Recreation Sites
County Assessors Office	Template for digital Building footprints
	Digital photos 200 residences
	Assessing Districts with dates for reassessment
County Clerk's Office	Voting Districts
	New voting districts based on census block data
	Proposed new voting districts based on U.S. Census recommendations
Public Safety Dispatch	Critical Facilities Map
	Fire Hydrants
	Railroad crossings and locations
	Emergency Services Jurisdiction Map
County Recorder's Office	Land owned by School District
	Current Annexations of all municipalities as of June 2000
	COGO of 6000 parcels and subdivisions, mostly in T 14 & 15 S R 10 E
County Engineers	Map and tables of section corner data at 1:100,000 scale (RSPLS)
	Map and tables of section corner data at 1:24,000 scales (GCDB)
	30 meter Contours (Elevation)